

What is claimed is:

1. A message brokering system for providing a  
publish/subscribe service for publisher and subscriber  
5 application programs, comprising:  
    means for receiving published messages from one or  
more publisher application programs;  
    means for forwarding received messages to connected  
message brokering systems;  
10      means, responsive to a communication characteristic  
of an inter-broker communication link between the message  
brokering system and one of said connected message  
brokering systems, for selecting a message filtering  
policy which is appropriate for the communication  
15 characteristic; and  
    means for controlling the forwarding of messages via  
the inter-broker communication link using the selected  
message filtering policy.
- 20 2. A message brokering system according to claim 1,  
wherein the communication characteristic used to select a  
message filtering policy is a communication protocol  
provided by the communication link.
- 25 3. A message brokering system according to claim 1,  
wherein establishing an inter-broker communication link  
includes:  
    defining the communication characteristic for the  
link;

comparing the communication characteristic with a list of administrator-defined associations between communication characteristics and message filtering policies, to select a message filtering policy for the communication link; and

storing an identification of the selected message filtering policy in association with the communication link.

10 4. A message brokering system according to claim 1, wherein the communication characteristic used to select a message filtering policy includes a dynamic communication characteristic.

15 5. A message brokering system according to claim 4, wherein the communication characteristic used to select a message filtering policy includes a measure of subscription activity.

20 6. A message brokering system according to claim 4, wherein the communication characteristic used to select a message filtering policy includes a measure of redundant message transmissions.

25 7. A message brokering system according to claim 1, wherein the means for controlling includes means for implementing a broadcast messaging policy and means for implementing a proxy-subscription-based message filtering policy, a respective one of said means for implementing

being activated in response to said selection of a message filtering policy.

5 8. A message brokering system according to claim 7, wherein said means for implementing a proxy-subscription-based messaging policy comprises:

means for receiving subscription information for connected message brokering systems and for storing said subscription information for comparison with received published messages;

10 means for forwarding to connected message brokering systems subscription information for subscriber application programs connected to the message brokering system.

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9. A message brokering system according to claim 7, wherein the broadcast messaging policy is implemented for links which provide a non-transactional messaging protocol and the proxy-subscription-based message filtering policy is implemented for links which provide a transactional messaging protocol.

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10. A message brokering system according to claim 1, wherein the selection of a message filtering policy is specific to a selected message topic or topic group.

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11. A data processing system comprising:

at least a first and a second message broker, connected via one or more inter-broker communication links and configured to provide a publish/subscribe

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service for publisher and subscriber application programs;

means, responsive to a communication characteristic of a communication link between the first and second :  
5 message brokers, for selecting a message filtering policy which is appropriate for the communication characteristic; and

means for controlling the transmission of messages via the inter-broker communication link using the  
10 selected message filtering policy.

12. A data processing system according to claim 11, wherein said means for selecting a message filtering policy is adapted to select one of a plurality of  
15 different policies in response to characteristics of a received message.

13. A data processing system according to claim 12, wherein the means for selecting a message filtering  
20 policy is adapted to select one of a plurality of different policies in response to a topic identifier within a received message.

14. A computer program product for providing a  
25 publish/subscribe brokering service for publisher and subscriber application programs, comprising program code recorded on a machine-readable recording medium, the program code comprising:

means for receiving published messages from one or  
30 more publisher application programs;

means for forwarding received messages to connected message brokering systems;

means, responsive to a communication characteristic of an inter-broker communication link between the message  
5 brokering system and one of said connected message brokering systems, for selecting a message filtering policy which is appropriate for the communication characteristic; and

means for controlling the forwarding of messages via  
10 the inter-broker communication link using the selected message filtering policy.

15 15. A method of communication in a publish/subscribe environment in which publisher application programs send messages to subscriber application programs via message brokers. The brokers are able to send messages to each other using a number of different communication protocols and to apply different filtering policies. The method comprises:

20 storing a definition of a message filtering policy for inter-broker communications for each of said communication protocols, the filtering policy either specifying no filtering or specifying a filtering rule;

25 responsive to receipt of a published message at a first message broker, referring to characteristics of the received message to determine an appropriate inter-broker communication protocol;

selecting the determined protocol and, if the selected protocol's stored message filtering policy

requires application of a filtering rule, applying the filtering rule to the message; and

transmitting the message to a second broker using the selected communication protocol only if transmission  
5 is consistent with the filtering rule.

16. A method of configuring a message brokering system for efficient inter-broker communications in a multi-broker publish/subscribe environment in which  
10 publishers publish messages via message brokers and subscribers register with message brokers to receive published messages, the method comprising:

responsive to a communication characteristic for a communication link between the message brokering system  
15 and another message brokering system, selecting a message filtering policy according to the determined communication characteristic; and

controlling the transmission of messages via the communication link using the selected message filtering  
20 policy.